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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/768,937	01/30/2004	John R. Rogers	H26-083 US	7178

21706 7590 01/26/2005

NOTARO AND MICHALOS
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EXAMINER	
SMITH, TYRONE W	

ART UNIT	PAPER NUMBER
2837	

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H·A

Office Action Summary	Application No.	Applicant(s)	
	10/768,937	ROGERS ET AL.	
	Examiner	Art Unit	
	Tyrone W Smith	2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-6 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-6 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-6 rejected under 35 U.S.C. 103(a) as being unpatentable over Pigott et al (6747434) in view of Hill et al (4631657)

Regarding Claims 1 and 5. Pigott discloses a method for controlling stepper motors which includes host computer (Figure 8 item 540) having a user interface (Figure 8 item 530) for entering commands to the stepper motor and defining a desired operation profile; and an interface computer (Figure 8 item 510) connected between the host computer and the stepper motor (Figure 8 item 500) having program means for executing a real-time controller program containing an objective function. Refer to column 13 lines 64-67, column 14 lines 1-67 and column 15 lines 1-22. However, Pigott does not disclose an interface computer or similar receiving real-time feedback from the stepper motor to produce optimized step-time sequence instructions, the interface transmitting the optimized step-time sequence instructions to the stepper motor.

Hill discloses a control and force sensing method and apparatus for motors which includes an interface computer or similar (Figure 3 item 18; refer also to item 14 of the same Figure) receiving real-time feedback from the stepper motor (Figure 3 items 36 and 44) to produce optimized step-time sequence instructions, the interface transmitting the optimized

step-time sequence instructions to the stepper motor. Refer to the abstract; column 7 lines 57-68 and column 8 lines 1-25.

It would be obvious to one of ordinary skill in the art at the time of invention to use Pigott's a method for controlling stepper motors with Hill's a control and force sensing method and apparatus for motors. The advantage of combining the two would provide a system that can generate and adjust the step size and step duration data as a function of the velocity/position at which the stepper motor is rotating.

Regarding Claims 2 – 4. Hill discloses a control and force sensing method and apparatus for motors which includes an interface computer or similar (Figure 3 item 18; refer also to item 14 of the same Figure) receiving real-time feedback from the stepper motor (Figure 3 item 44) to produce optimized step-time sequence instructions, the interface transmitting the optimized step-time sequence instructions to the stepper motor. Refer to the abstract; column 7 lines 57-68 and column 8 lines 1-25.

It would be obvious to one of ordinary skill in the art at the time of invention to use Pigott's a method for controlling stepper motors with Hill's a control and force sensing method and apparatus for motors. The advantage of combining the two would provide a system that can generate and adjust the step size and step duration data as a function of the velocity/position at which the stepper motor is rotating.

Regarding Claim 6. Pigott discloses a method for controlling stepper motors which includes providing an interface computer (Figure 8 item 530) connected with the stepper motor (Figure 8 item 500); generating an objective function model for optimizing a step-time sequence for the stepper motor; loading an optimization program including the objective function model on the interface computer; and generating an initial step-time sequence for the stepper motor. Refer to column 13 lines 64-67, column 14 lines 1-67 and column 15 lines 1-22. However, Pigott

does not disclose an interface computer or similar receiving real-time feedback from the stepper motor to produce optimized step-time sequence instructions, the interface transmitting the optimized step-time sequence instructions to the stepper motor.

Hill discloses a control and force sensing method and apparatus for motors, which includes receiving, at the interface computer (Figure 3 item 18; refer also to item 14 of the same Figure), feedback from and running the optimization program on the interface computer to minimize a result from the objective function model response to the feedback to generate an optimized step-time sequence. Refer to the abstract; column 7 lines 57-68 and column 8 lines 1-25.

It would be obvious to one of ordinary skill in the art at the time of invention to use Pigott's a method for controlling stepper motors with Hill's a control and force sensing method and apparatus for motors. The advantage of combining the two would provide a system that can generate and adjust the step size and step duration data as a function of the velocity/position at which the stepper motor is rotating.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Prior art related to the current invention is disclosed in the PTO-892.

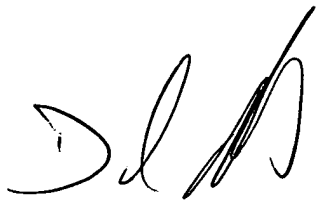
4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tyrone W Smith whose telephone number is 571-272-2075. The examiner can normally be reached on weekdays from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin, can be reached on 571-272-2800 ext 37. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tyrone Smith
Patent Examiner

Art Unit 2837



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